Notice of Allowability	Application No. 10/628,830	Applicant(s) DUNDAS ET AL.	
	Examiner Robert B. Davis	Art Unit 1722	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *the telephone interview of September 21, 2005*.

2. ☒ The allowed claim(s) is/are *1-37*.

3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
   a) ☐ All b) ☐ Some* c) ☐ None of the:
      1. ☐ Certified copies of the priority documents have been received.
      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
      3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
   (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date 7/28/03 & 11/3/03
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413), Paper No./Mail Date *09212005* .
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

page 4 signature

500

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Thomas Hooker, Esq. on September 21, 2005.

The application has been amended as follows:

Claims 1, 22, 27, 28, 32 and 33 have been amended as follows in the attached listing of claims.

2. The following is an examiner's statement of reasons for allowance: None of the prior art teaches or suggests an extrusion head assembly for a vertical rotary blow molding machine using molds having radially inner and radially outer mold cavities; the assembly comprising a body having an outer side; a first extrusion head in the body, the first extrusion head having a first head annular flow passage and a first head mouth opening in the direction of rotation of the wheel for extruding a first parison for capture in inner mold cavities; a second extrusion head in the body, the second extrusion head having a second head annular flow passage and a second head mouth opening in the direction of rotation of the wheel for extruding a second parison for capture in outer mold cavities, the second extrusion head located outwardly of the first extrusion head and between the first extrusion head and the outer side of the body; a first resin

passage in said body, said first resin passage extending from an inlet end at the outer side, into the body, past the second head flow passage, and to the first head flow passage; and a second resin passage in said body, said second resin passage extending from an inlet end at the outer side of the body, into the body and to the second head flow passage. The closest prior art (Bailey et al) discloses an extrusion head assembly for use with a horizontal rotary blow molding machine having adjacent annular flow passages in which one of the flow passages extends past the other; however, the reference fails to disclose or suggest the second extrusion head located outwardly of the first extrusion head and between the first extrusion head and the outer side of the body, wherein a first resin passage extending from an inlet end at the outer side into the body, past the second head flow passage. Hagen (3,225,382) discloses an extrusion head having three outlet ports (45, 46, 47) connected to an extruder (44), but the reference is devoid of any specifics of the resin flow passages and is directed to a reciprocating blow molding assembly. The extrusion head would not operate properly if the flow went directly from the extruder through a common flow passage without a central split to form equal length flow passages from the extruder to the dies (45, 46, 47); clearly the reference does not disclose a resin passage that extends past an inner molding die and extending to an outer molding die for use with a vertical rotary blow molding machine having molds having radially inner and outer mold cavities.

In regards to method claim 33, none of the prior art of record teaches an extrusion blow molding method wherein successive open molds are rotated past the sides of the inner and outer heads having the flow passages referred to above wherein

the resin flows past a radially outer extrusion head and to an inlet port for an inner extrusion head.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert B. Davis whose telephone number is 571-272-1129. The examiner can normally be reached on Monday-Friday 9-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duane Smith can be reached on 571-272-1166. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Robert B. Davis
Primary Examiner
Art Unit 1722

9/21/05

Claims listing:

1. (Currently amended) An extrusion head assembly for a vertical rotary blow molding machine using molds having radially inner and radially outer mold cavities; the assembly comprising a body having an outer side; a first extrusion head in the body, the first extrusion head having a first head annular flow passage and a first head mouth opening in the direction of rotation of the wheel for extruding a first parison for capture in inner mold cavities; a second extrusion head in the body, the second extrusion head having a second head annular flow passage and a second head mouth opening in the direction of rotation of the wheel for extruding a second parison for capture in outer mold cavities, the second extrusion head located outwardly of the first extrusion head and between the first extrusion head and the outer side of the body; a first resin passage in said body, said first resin passage extending from an inlet end at the outer side, into the body, past the second head flow passage, and to the first head flow passage; and a second resin passage in said body, said second resin passage extending from an inlet end at the outer side of the body, into the body and to the second head flow passage.

2. (Original) The assembly as in claim 1 wherein said resin passages are at different heights.

3. (Original) The assembly as in claim 1 wherein the first head mouth is above the second head mouth; and said first resin passage is above said second resin passage.

4. (Original) The assembly as in claim 1 wherein said first and said second resin passages are each located entirely in said body.

5. (Original) The assembly as in claim 1 including a third resin passage in said body, said third resin passage extending from an inlet end into the body, past the second head flow passage and to the first head flow passage.

6. (Original) The assembly as in claim 5 including a fourth resin passage in said body, said fourth resin passage extending from an inlet end into the body and to the second head flow passage.

7. (Original) The assembly as in claim 6 wherein said first and third resin passages join the first head flow passage at first and second head ports, such ports spaced apart around such flow passage; and said second and fourth resin passages join the second head flow passage at third and fourth head ports, such ports spaced apart around such flow passage.

8. (Original) The assembly as in claim 6 wherein said first and third resin passages are located at a first height; and said second and fourth resin passages are located at a second height different from said first height.

9. (Original) The assembly as in claim 6 including a manifold on said body outwardly of said second head, the manifold including a first inlet port for flowing resin to the first extrusion head, a second inlet port for flowing resin to the second extrusion head, a first branched manifold passage extending from the first inlet port to the inlet ends of the first and third resin passages; and a second branched passage extending from the second inlet port to the inlet ends of the second and fourth resin passages; wherein resin supplied to the first inlet port is flowed through the first branched passage and the first

and third resin passages to the first head flow passage, and resin supplied to the second inlet port flows through the second branched passage and said second and fourth resin passages to second head flow passage.

10. (Original) The assembly as in claim 9 wherein said first and third resin passages are above said second and fourth resin passages.

11. (Original) The assembly as in claim 9 wherein said manifold includes a manifold surface facing away from said extrusion heads, said inlet ports located on said manifold surface.

12. (Original) The assembly as in claim 1 including a resin extruder; a first flow conduit connecting the extruder to the first resin passage; a second flow conduit connecting the extruder to the second resin passage; a first melt pump located in said first flow conduit; and a second melt pump located in said second flow conduit; wherein said melt pumps isolate the resin pressure in each flow conduit from the pressure in the other flow conduit and from the pressure in the extruder.

13. (Original) The assembly as in claim 1 wherein the first head mouth is located above the second head mouth.

14. (Original) The assembly as in claim 1 wherein each extrusion head comprises a coextrusion head.

15. (Original) The assembly as in claim 14 wherein the first head mouth is located above the second head mouth.

16. (Original) The assembly as in claim 15 wherein the first resin passage is located above the second resin passage.

17. (Original) The assembly as in claim 14 wherein each coextrusion head includes a plurality of nested conical bushings.

18. (Original) The assembly as in claim 17 wherein each bushing has the same height.

19. (Original) The assembly as in claim 17 wherein each coextrusion head includes a mandrel, a die ring on the top bushing, and a die pin located within said ring, the pin and ring of each head defining the size of the mouth for the head; a control cylinder located below the mandrel, a die rod joined to said die pin and extending through the mandrel to the control cylinder; the first head mouth located above the second head mouth; and the die rod of the second head being longer than the die rod of the first head, wherein said control cylinders are located at the same level.

20. (Original) The assembly as in claim 1 wherein said inlet ends are located out of the path of movement of the molds.

21. (Original) The assembly as in claim 1 wherein said resin passages are in said heads.

22. (Currently amended) A coextrusion head assembly for a vertical rotary blow molding machine using a plurality of molds each having a radially inner mold cavity and a radially outer mold cavity; the assembly comprising a body having an outer side; a first coextrusion head in the body, the first extrusion head including a first head annular flow passage and a first head extrusion mouth for extruding a first multi-layer parison for capture in inner mold cavities; a second coextrusion head in the body, the second coextrusion head located outwardly of the first coextrusion head and between the first coextrusion head and the outer side of the body, the second coextrusion head including

a second head annular flow passage and a second extrusion mouth for extruding a second multi-layer parison for capture in outer mold cavities; a first resin passage for each layer in the first multi-layer parison, said first resin passages each including an inlet end at the outer side of the body and extending from such end through the body, past the second extrusion head and to the first head flow passage; and a second resin passage for each layer in the second multi-layer parison, said second resin flow passages each including an inlet end at the outer side of the body and extending from such end through the body to said second head flow passage.

23. (Original) The assembly as in claim 22 wherein all said passages are in said heads.

24. (Original) The assembly as in claim 22 wherein the second head extrusion mouth is located above the first head extrusion mouth.

25. (Original) The assembly as in claim 24 wherein each coextrusion head extrudes a parison having the same number of resin layers; and the resin passage supplying resin for one layer in the first coextrusion head is located above the resin passage supplying resin to a corresponding layer in the second coextrusion head.

26. (Original) The assembly as in claim 22 wherein all said inlet ends are located out of the path of movement of the molds.

27. (Currently amended) The assembly as in claim 22 wherein each coextrusion head includes a pair of 180 degree-opposed head inlet ports for each parison layer; and said first resin ~~flow~~ passages extend past the second head ~~flow passage~~ passages and to ~~each~~ said first head inlet ~~port~~ ports; and said second resin ~~flow~~ passages extend to ~~each~~ said second head inlet ~~port~~ ports.

28. (Currently amended) The assembly as in claim 27 wherein said first ~~resin~~ flow passages extend past opposite sides of said second head ~~flow passage~~.

29. (Original) The assembly as in claim 27 including a manifold on said body, the manifold including a plurality of first manifold inlet ports and a first branched manifold passage connecting each first manifold inlet port to two first resin flow passages; and a plurality of second manifold inlet ports and second branched manifold passage connecting each second manifold inlet port to the two second resin flow passages.

30. (Original) The assembly as in claim 29 wherein the first manifold inlet ports are located in a row and the second manifold inlet ports are located in a row.

31. (Original) The assembly as in claim 22 wherein each coextrusion head includes a mandrel and a plurality of nested conical bushings surrounding the mandrel for flowing resin layers onto the mandrel; said mandrels and bushings in each head being identical.

32. (Currently amended) The assembly as in claim 22 including a resin extruder; a first melt conduit extending from the resin extruder to one of said first ~~resin~~ flow passages; a second melt conduit extending from the extruder to one of said of second ~~resin~~ flow passages; and two melt pumps, each melt pump located in one of said melt conduits.

33. (Currently amended) A ~~The~~ method of blow molding articles in a rotary blow molding machine having a plurality of like dual cavity molds each defining a radially inner cavity and a radially outer cavity; a wheel supporting the molds; a drive for rotating the wheel; a drive for closing the molds to capture a parison in each mold cavity and for opening the molds to eject blow molded articles; and an extrusion assembly having a body, radially inner and radially outer extrusion heads in the body, each extrusion head

including an annular flow passage and a flow mouth, the heads extruding inner and outer parisons for capture in the radially inner and radially outer cavities when the molds are closed on the parisons, and a source of resin to be extruded; comprising the steps of:

A) flowing resin from the source along a first resin passage in the body extending past the radially outer extrusion head and to an inlet port for the radially inner extrusion head for extrusion in the inner parison;

B) flowing resin from the source along a second resin passage in the body extending to an inlet port for the radially outer extrusion head for extrusion in the outer parison;

C) rotating successive open molds past the sides of said inner and outer heads and to either side the inner and outer parisons;

D) closing successive open molds on inner and outer parisons to capture portions of said parisons in the radially inner and radially outer cavities;

E) blowing the parisons in the cavities to articles; and form blow molded

F) opening the molds and ejecting the blow molded articles.

34. (Original) The method of claim 33 including the step of:

G) flowing resin for the inner extrusion head past one side of the flow passage for the outer extrusion head.

35. (Original) The method of claim 33 including the step of:

H) flowing resin for the radially inner extrusion head past opposite sides of the flow passage for the radially outer extrusion head.

36. (Original) The method of claim 33 including the steps of:

I) flowing resin to the radially inner head through spaced inlet ports; and

J) flowing resin to the radially outer extrusion head through spaced head inlet ports.

37. (Original) The method of claim 33 including the steps of:

L) flowing a plurality of different resins to each extrusion head; and

M) extruding a multi-layer parison from each extrusion head.